CBCS SCHEME

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17MT52

Fifth Semester B.E. Degree Examination, Jan./Feb.2021
Virtual Instrumentation

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Define Virtual Instrumentation. Explain the working operation of virtual instrumentation with neat block diagram. **(10 Marks)**

b. Write a short note on: (i) Need and virtual instrumentation.
(ii) Advantages of virtual instrumentation. **(04 Marks)**

c. Comparison between conventional programming and graphical programming. **(06 Marks)**

OR

2 a. Explain the concepts of universal data acquisition. **(10 Marks)**

b. Explain the working operation of single ended input and differential ended inputs with neat diagram. **(10 Marks)**

Module-2

3 a. Explain the working operation of sample and hold circuit with neat diagram. **(10 Marks)**

b. Explain the process involved in data acquisition system with neat diagram. **(10 Marks)**

OR

4 a. Explain the working operation of Analog to Digital converters with neat diagram. **(10 Marks)**

b. Explain the concepts of counters and timers in virtual instrumentation. **(10 Marks)**

Module-3

5 a. Define Labview. Explain the important components of Labview. **(10 Marks)**

b. Define Structures. Explain sequence structures and case structures with an example. **(10 Marks)**

OR

6 a. Define Array. Explain the operation of 1-D Array and 2-D Array with example. **(10 Marks)**

b. Describe the working operation of file input/output system with example. **(10 Marks)**

Module-4

7 a. Comparison between RS-232, RS-422, RS-485. **(08 Marks)**

b. Explain the architecture of IEEE-488 bus system with neat diagram. **(12 Marks)**

OR

8 a. Explain the working operation OSI model with neat diagram. **(10 Marks)**

b. Explain the architecture of CAN controller with neat diagram. **(10 Marks)**

Module-5

9 a. Build a VI for temperature monitoring system for every 250 ms using Labview. **(10 Marks)**

b. Build a VI for CRO simulation using simulate signal with Labview. **(10 Marks)**

OR

10 a. Generate a VI for developing a HTML page using Labview. **(10 Marks)**

b. Build a VI for simple second order system using Labview. **(10 Marks)**

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